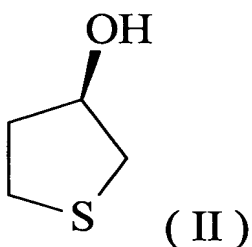
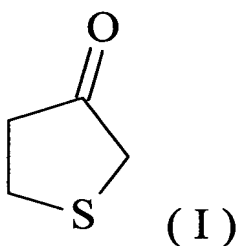


CLAIMS

1. A method for manufacturing (R)-tetrahydrothiophene-3-ol denoted by formula (II):



by bioconversion of tetrahydrothiophene-3-one denoted by formula (I):



to (R)-tetrahydrothiophene-3-ol denoted by formula (II), comprising the steps of:

- (A) incubating the tetrahydrothiophene-3-one denoted by formula (I) in the presence of a strain, or a preparation of a cultured cell thereof, belonging to *Penicillium*, *Aspergillus*, or *Streptomyces* that is capable of said bioconversion; and
- (B) collecting the (R)-tetrahydrothiophene-3-ol denoted by formula (II) from incubated solution.

2. The method according to claim 1, wherein said strain capable of the bioconversion is a strain belonging to *Penicillium vinaceum*, *Aspergillus ochraceus*, or *Streptomyces michiganensis*.

3. The method according to claim 1 or 2, wherein said strain capable of the bioconversion is *Penicillium vinaceum* IAM7143 (Deposit Number: NITE BP-35), *Aspergillus ochraceus* ATCC18500 (deposit Number: NITE BP-41), or *Streptomyces*

michiganensis NBRC12797 (Deposit Number: NITE BP-36).

4. A method for crystallization of optically active tetrahydrothiophene-3-ol of improved optical purity, characterized by maintaining a solution comprising optically active tetrahydrothiophene-3-ol and organic solvent at equal to or lower than 1°C to cause optically active tetrahydrothiophene-3-ol to crystallize from said solution.

5. A method for crystallization of optically active tetrahydrothiophene-3-ol of improved optical purity, characterized by adding optically active tetrahydrothiophene-3-ol dropwise to organic solvent at a solution temperature of equal to or lower than 1°C to cause optically active tetrahydrothiophene-3-ol to crystallize.

6. The method according to claim 5, wherein said dropwise addition of optically active tetrahydrothiophene-3-ol is conducted with stirring said organic solvent.

7. The method according to any of claims 4 to 6, wherein the organic solvent is compatible with optically active tetrahydrothiophene-3-ol, and does not solidify at a temperature at which the crystallization is conducted.

8. The method according to any of claims 4 to 7, wherein the optically active tetrahydrothiophene-3-ol comprises excess amount of R-isomer.

9. The method according to any of claims 4 to 8, wherein said organic solvent is at least one solvent selected from the group consisting of hexane, heptane, ethyl acetate, butyl acetate, acetone, methyl ethyl ketone, ethanol, 2-propanol and toluene, or a mixed solvent thereof.

10. The method according to any of claims 4 to 9, wherein the crystallization temperature of said optically active tetrahydrothiophene-3-ol is equal to or lower than 1

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°C.